



對外經濟貿易大學

## Chapter 8

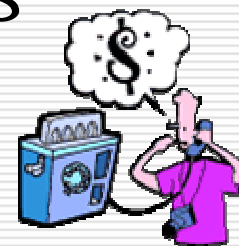
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# Liquidity Planning and Managing Cash Assets

# Cash and Liquidity Requirements

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- The amount of cash held is heavily influenced by the bank's liquidity requirements.
- Vault cash is held to meet reserve requirements and transactions purposes



# Liquidity and Risks and Returns

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- Liquidity needs arise from net deposit outflows, as balances held with Federal Reserve Banks or correspondent banks decline.
- Most withdrawals are predictable because they are either contractually based or follow well-defined patterns.

# A common definition of liquidity

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- For a financial institution that regularly borrows in the financial markets, liquidity takes on the added dimension of the ability to borrow funds at minimum cost or even the ability to issue stock.
- It explicitly recognizes that such firms can access cash by selling assets, by new borrowing, and by new stock issues.

# Cash versus liquid assets

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- Banks own four types of cash assets:
  1. vault cash,
  2. demand deposit balances at Federal Reserve Banks,
  3. demand deposit balances at private financial institutions, and
  4. cash items in the process of collection (CIPC).

# Why do banks hold cash assets?

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1. Banks supply coin and currency to meet customers' regular transactions needs.
2. Regulatory agencies mandate legal reserve requirements that can only be met by holding qualifying cash assets.
3. Banks serve as a clearinghouse for the nation's check payment system.
4. Banks use cash balances to purchase services from correspondent banks.

# Liquid assets

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- A liquid asset is one that can be easily and quickly converted into cash with minimum loss.
- Contrary to popular notion "cash assets" do not generally satisfy a bank's liquidity needs.

# Liquid Assets

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1. Cash and due from banks in excess of requirements,
  2. Federal funds sold and reverse repurchase agreements,
  3. Short-term Treasury and agency obligations,
  4. High quality short-term corporate and municipal securities, and
  5. Some government-guaranteed loans that can be readily sold.
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# Reserve balances at the Federal Reserve Bank

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- Banks hold deposits at the Federal Reserve in part because the Federal Reserve imposes legal reserve requirements and deposit balances qualify as legal reserves.
- Banks also hold deposits to help process deposit inflows and outflows caused by check clearings, maturing time deposits and securities, wire transfers, and other transactions.

# Required reserves and monetary policy

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- The purpose of required reserves is to enable the Federal Reserve to control the nation's money supply.
- There are basically three distinct monetary policy tools:
  1. open market operations,
  2. changes in the discount rate, and
  3. changes in the required reserve ratio.

# Changes in reserve requirements

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- Changes in reserve requirements directly affect the amount of legal required reserves and thus change the amount of money a bank can lend out.
- For example, a required reserve ratio of 10% means that a bank with \$100 in demand deposit liabilities outstanding must hold \$10 in legal required reserves in support of the DDAs.
  - The bank can thus lend only 90 percent of its DDAs.

# Required reserves

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- Legal reserves = vault cash and deposits at the Federal Reserve Bank.
- What determines required reserves?
  - $RR = r_{dd} \times DD + r_{td} \times TD$ 
    - actually today,  $r_{td} = 0$
- Why are required reserves so important?
- Recall that money (M1) is:
  - $M1 = \text{Cash}_{\text{non bank public}} + DD$  and
  - $DD = \text{Reserves} / r_{dd}$
  - > the money multiplier.

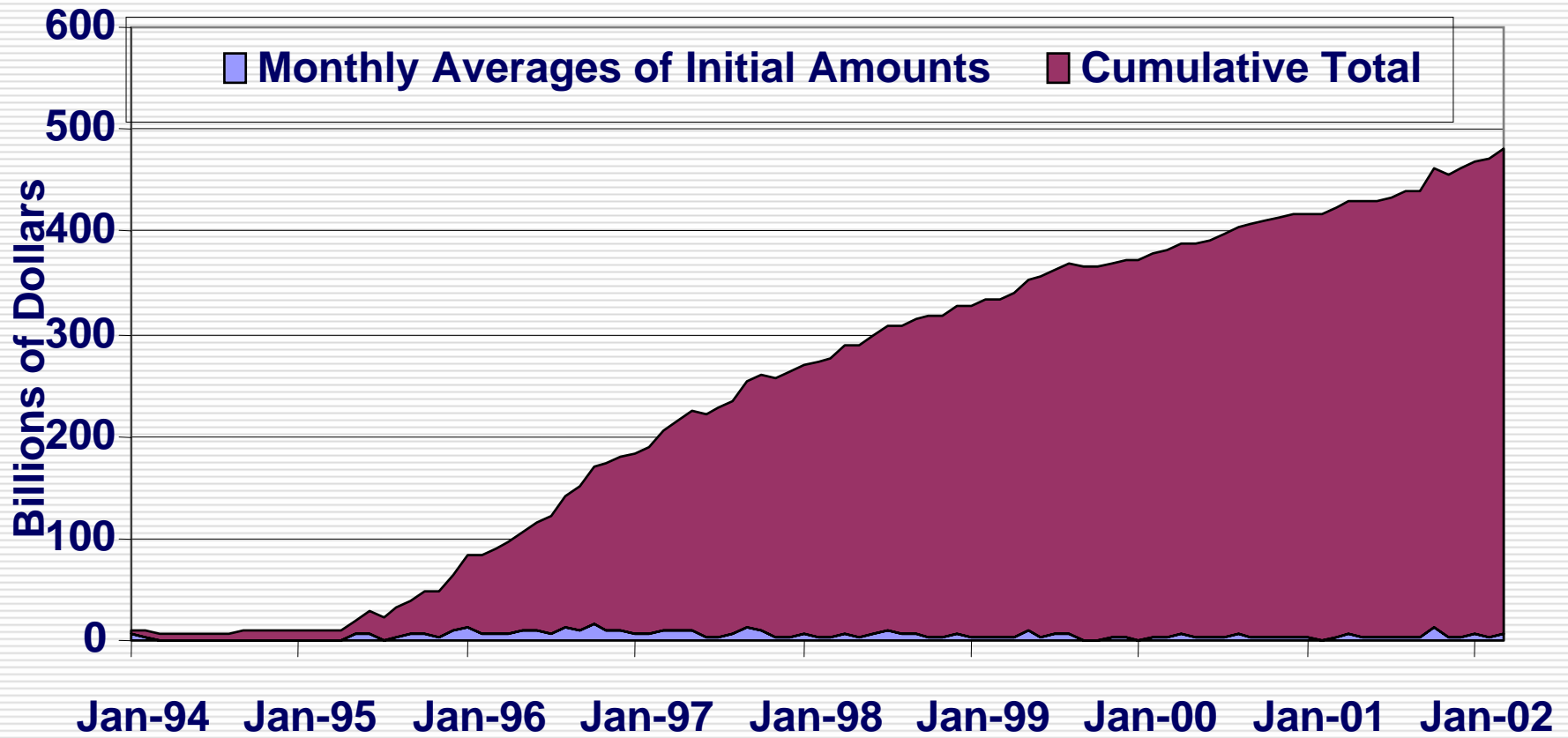
# Sweep accounts

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- Under the Federal Reserve's Regulation D, checkable deposit accounts such as demand deposits, ATS, NOW, and other checkable deposit (OCD) accounts have a 10% reserve requirement, but money market deposit accounts (MMDAs) are considered personal saving deposits and have a zero required reserve requirement ratio.

# The impact of sweep accounts on required reserve balances

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# Meeting legal reserve requirements

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- Required reserves can be met over a two-week period.
- Reserves must be held to a fraction of its base liabilities.
- There are three elements of required reserves:
  1. the dollar magnitude of base liabilities,
  2. the required reserve fraction, and
  3. the dollar magnitude of qualifying cash assets.

# Reserve requirement percentages for depository institutions

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Type of Deposit	Percentage	Effective Date of Applicable Percentages
<b>Net transactions Accounts</b>		
Exempt amt.           \$ 5.70 mill	0.00%	7/1/2000
Up to                   \$ 41.30 mill	3.00%	7/1/2000
Over                    \$ 41.30 mill	10.00%	7/1/2000
<b>All other liabilities</b>	<b>0.00%</b>	<b>7/1/2000</b>



# Lagged reserve accounting

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- Under the current lagged reserve accounting (LRA) procedure:
  - banks must maintain reserves on a daily average basis-for a 14-day period (reserve maintenance period) beginning on the third Thursday following the computation period.

# Satisfying reserve requirements

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- Both vault cash and Fed deposit balances qualify as reserves, but the timing varies.
- Daily average balances determine the amount of vault cash that qualifies over the two-week computation period that ends three days prior to the maintenance period.

# Lagged reserve accounting

<u>Sun</u>	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thu</u>	<u>Fri</u>	<u>Sat</u>
<b>July</b> 8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>
<u>29</u>	<u>30</u>	<u>31</u>	Aug <u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
<u>5</u>	<u>6</u>	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25

Lagged  
Computation  
Period

Reserve Maintenance Period

Vault Cash  
Computation  
Period

# Report of reservable liabilities and offsetting asset balances

## Balances at Close of Business Day (millions of dollars)

Lagged Computation Period	Tue 10-Jul	Wed 11-Jul	Thu 12-Jul	Fri 13-Jul	Sat 14-Jul	Sun 15-Jul	Mon 16-Jul	Tue 17-Jul	Wed 18-Jul	Thu 19-Jul	Fri 20-Jul	Sat 21-Jul	Sun 22-Jul	Mon 23-Jul
DDA's	992	995	956	954	954	954	989	996	960	959	958	958	958	990
Auto trans from sav.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOW and Super Now	221	221	222	223	223	223	223	224	225	225	225	225	225	225
<i>Deductions:</i>														
DD bal from U.S. dep	163	281	190	186	186	186	159	159	274	178	182	182	182	164
CIPC	96	96	78	78	78	78	95	98	92	79	81	81	81	88
Net Trans. accts	954	839	910	913	913	913	958	963	819	927	920	920	920	963
<b>Vault Cash</b>	28	30	31	33	33	33	38	30	31	32	32	32	32	36

# Report of reservable liabilities and offsetting asset balances

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<b>Lagged Computation Period</b>	<b>Two- Week</b>	<b>Daily Average</b>
DDA's	\$ 13,573	\$ 969.50
Auto trans from sav.	\$ -	\$ -
NOW and Super Now	\$ 3,130	\$ 223.57
<i>Deductions:</i>	\$ -	\$ -
DD bal from U.S. dep.	\$ 2,672	\$ 190.86
CIPC	\$ 1,199	\$ 85.64
Net Trans. accounts	\$ 12,832	\$ 916.57
<b>Vault Cash</b>	\$ 451	\$ 32.21

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# Required reserve report: August 9-22

<b>Reservable Liabilities for</b>	<b>Daily Avg. Deposit Liab. (\$mill)</b>	<b>Reserve Percentage</b>	<b>Daily Avg. Requirement (\$ mill)</b>
<b>July 10-23</b>			
Net Trans. accounts			
Exempt up to \$ 5.70 mill	5.70	0.0%	\$0.000
Over 5.7 up to \$ 41.30 mill	\$ 35.60	3.0%	\$1.068
Over \$ 41.30 mill	\$ 875.27	10.0%	\$87.527
Total	\$ 916.57		
<b>Gross reserve requirement</b>			\$88.595
Daily Average Vault Cash			\$32.214
Net reserve requirement			\$56.381
Reserve carry-forward (prior period)			(\$ 2.276)
<i>Minimum reserves to be maintained with Federal Reserve</i>			\$58.657
<i>Maximum reserves to be maintained</i>			\$62.201
(0.04 x 88.595) + 58.657			
<b><u>If a surplus carry forward of</u></b>	<b>\$ 1.000</b>		
<i>Minimum reserves to be maintained with Federal Reserve</i>			\$55.381
Carry forward (4% of gross reserve requirement)			\$3.544
<i>Maximum reserves to be maintained</i>			\$58.925
(0.04 x 88.595) + 55.381			

# Reserves planning

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## Factors Increasing Reserves

### *Nondiscretionary*

Yesterday's immediate cash letter  
Deferred availability items  
Excess from local clearinghouse  
Deposits from U.S. Treasury

### *Discretionary*

Currency/coin shipped to Federal Reserve  
Security sales  
Borrowing from Federal Reserve  
Federal funds purchased  
Securities sold under agreement to repurchase  
Interest payments on securities  
New certificates of deposit, Eurodollar issues

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## Factors Decreasing Reserves

### *Nondiscretionary*

Remittances charged  
Deficit in local clearinghouse  
Treasury tax and loan account calls  
Maturing certificates of deposit, Eurodollars not rolled over

### *Discretionary*

Currency and coin received from Federal Reserve  
Security purchases  
Payment on loans from Federal Reserve  
Federal funds sold  
Securities purchased under agreement to resell

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# Managing float

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- Individuals, businesses, and governments deposit the checks but cannot use the proceeds until banks give their approval, typically in several days.
- Checks in process of collection, called float, are a source of both income and expense to banks.



# The payment system

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- Payments between banks can be made either by check or electronically.
- Payments made electronically directly and immediately alter balances held at Federal Reserve Banks.
- This network for transferring funds electronically is called the Fedwire.

# Example of the check-

Bay Area National Bank, San Jose

**ΔASSETS**

**ΔLIABILITIES**

1. CIPC	+\$500	Demand deposit owed the business	+\$500
4. CIPC	-\$500		
Demand deposit at BOC	+\$500		

Bank of California, San Francisco

**ΔASSETS**

**ΔLIABILITIES**

2. CIPC	+\$500	Demand deposit (BANB)	+\$500
5. CIPC	-\$500		
Demand deposit at FRB of San Francisco	+\$500		

Federal Reserve Bank of San Francisco

**ΔASSETS**

**ΔLIABILITIES**

3. CIPC	+\$500	DACI	+\$500
5.		DACI	-\$500
		Demand deposit (BOC)	+\$500
6. CIPC	-\$500	Demand deposit (CNB)	-\$500

Community National Bank, Portland

**ΔASSETS**

**ΔLIABILITIES**

6. Demand deposit at FRB of San Francisco	-\$500	Demand deposit owed the individual	-\$500
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NOTE: CIPC indicates checks in the process of collection; BOC, Bank of California; FRB, Federal Reserve Bank; BANB, Bay Area National Bank; DACI, deferred credit availability items; and CNB, Community National Bank.



# Correspondent banking services

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- Check collection, wire transfer and coin supply,
  - Loan participation assistance,
  - Data processing services,
  - Portfolio analysis and investment advice,
  - Federal funds trading,
  - Securities safekeeping,
  - Arrangement of purchase or sale of securities,
  - Investment banking services.
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# Pricing correspondent services: monthly analysis

## **A. Services Provided: June**

Check clearing	
10,540 items at \$0.045 per item	\$474.30
Wire transfers	
28 items at \$1.50 per item	42.00
Security safekeeping	
7 items at \$3.00 per item	21.00
Data processing services/microcomputer software	<u>100.00</u>
Total monthly cost	\$637.30

## **B. Correspondent Bank Revenues**

Fees for computer services	\$100.00
Required investment income from compensating balances	<u>537.30</u>
Total	\$637.30

## **C. Required Ledger Balances (B)**

Investment income = (Earnings credit)(30/365)(Ledger balances – Float – Required reserves)  
If earnings credit = 8%, average float = \$7,200, and required reserves = 10% of collected balances;  
 $537.30 = (.08)(30/365)(.90)(B - 7,200)$   
B = \$97,994

# The development of liquidity strategies

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- Historically, liquidity management focused on assets and was closely tied to lending policies.
- Under the commercial loan theory prior to 1930, banks were encouraged to make only short-term, self-liquidating loans.

# The development of liquidity strategies

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- Shiftability theory represented the next extension by recognizing that any liquid asset could be used to meet deposit withdrawals.
- In particular, a bank could satisfy its liquidity requirements if it held loans and securities that could be sold in the secondary market prior to maturing.

# The development of liquidity strategies

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- Anticipated income theory, which suggested that liquidity requirements and thus loan payments should be tied to a borrower's expected income.
- Around 1950 the focus shifted to the anticipated income theory
- Banks were still encouraged to invest in marketable instruments but now structured loans so that the timing of principal and interest payments matched the borrower's ability to repay from income.

# The development of liquidity strategies

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- Liability management theory, banks can satisfy liquidity needs by borrowing in the money and capital markets.
- More recently, banks have focused on liabilities.
- When they need immediately available funds, they can simply borrow via federal funds purchased, RPs, jumbo CDs, commercial paper, and Eurodollars.



# The development of liquidity strategies

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- Today, banks use both assets and liabilities to meet liquidity needs.
- Available liquidity sources are identified and compared to expected needs by a bank's asset and liability management committee (ALCO).

# Liquidity versus profitability

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- There is a short-run trade-off between liquidity and profitability.
  - The more liquid a bank is, the lower its return on equity and return on assets, all other things being equal.
- Both asset and liability liquidity contribute to this relationship.
  - Asset liquidity is influenced by the composition and maturity of funds.

# Liquidity risk, credit risk, and interest rate risk

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- Liquidity management is a day-to-day responsibility.
  - Liquidity risk, for a poorly managed bank, closely follows credit and interest rate risk.
    - Banks that experience large deposit outflows can often trace the source to either credit problems or earnings declines from interest rate gambles that backfired.
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# Factors affecting certain liquidity needs:

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## □ New Loan Demand

- Unused commercial credit lines outstanding
- Consumer credit available on bank-issued cards
- Business activity and growth in the bank's trade area
- The aggressiveness of the bank's loan officer call programs

# Factors affecting certain liquidity needs:

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## □ Potential deposit losses

- The composition of liabilities
- Insured versus uninsured deposits
- Deposit ownership between: money fund traders, trust fund traders, public institutions, commercial banks by size, corporations by size, individuals, foreign investors, and Treasury tax and loan accounts
- Large deposits held by any single entity
- Seasonal or cyclical patterns in deposits
- The sensitivity of deposits to changes in the level of interest rates

# Traditional measures of liquidity

## asset liquidity measures

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- Asset liquidity  
*...the ease of converting an asset to cash with a minimum loss.*
- The most liquid assets mature near term and are highly marketable.
- Liquidity measures are normally expressed in percentage terms as a fraction of total assets.

# Highly liquid assets

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- Cash and due from banks in excess of required holdings and due from banks-interest bearing, typically with short maturities
  - Federal funds sold and reverse RPs.
  - U.S. Treasury securities maturing within one year
  - U.S. agency obligations maturing within one year
  - Corporate obligations maturing within one year and rated Baa and above
  - Municipal securities maturing within one year and rated Baa and above
  - Loans that can be readily sold and/or securitized
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# Pledging requirements

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- ❑ Not all of a bank's securities can be easily sold.
- ❑ Like their credit customers, banks are required to pledge collateral against certain types of borrowings.
- ❑ U.S. Treasuries or municipals normally constitute the least-cost collateral and, if pledged against debt, cannot be sold until the bank removes the claim or substitutes other collateral.



# Loans

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- Many banks and bank analysts monitor loan-to-deposit ratios as a general measure of liquidity.
- Loans are presumably the least liquid of assets, while deposits are the primary sources of funds.
- A high ratio indicates illiquidity because a bank is fully extended relative to its stable funding.

# The loan-to-deposit ratio

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- Two banks with identical deposits and loan-to-deposit ratios may have substantially different liquidity if one bank has highly marketable loans while the other has risky, long-term loans.
- An aggregate loan figure similarly ignores the timing of cash flows from interest and principal payments.
- The same is true for a bank's deposit base.
- Some deposits, such as long-term nonnegotiable time deposits, are more stable than others, so there is less risk of withdrawal.

# Aggregate ratios

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- In summary, the best measures of asset liquidity identifies the dollar amounts of unpledged liquid assets as a fraction of total assets.
- The greater the fraction, the greater the ability to sell assets to meet cash needs.

# Liability liquidity measures

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- Liability liquidity  
*...the ease with which a bank can issue new debt to acquire clearing balances at reasonable costs.*
- Measures typically reflect a bank's asset quality, capital base, and composition of outstanding deposits and other liabilities.

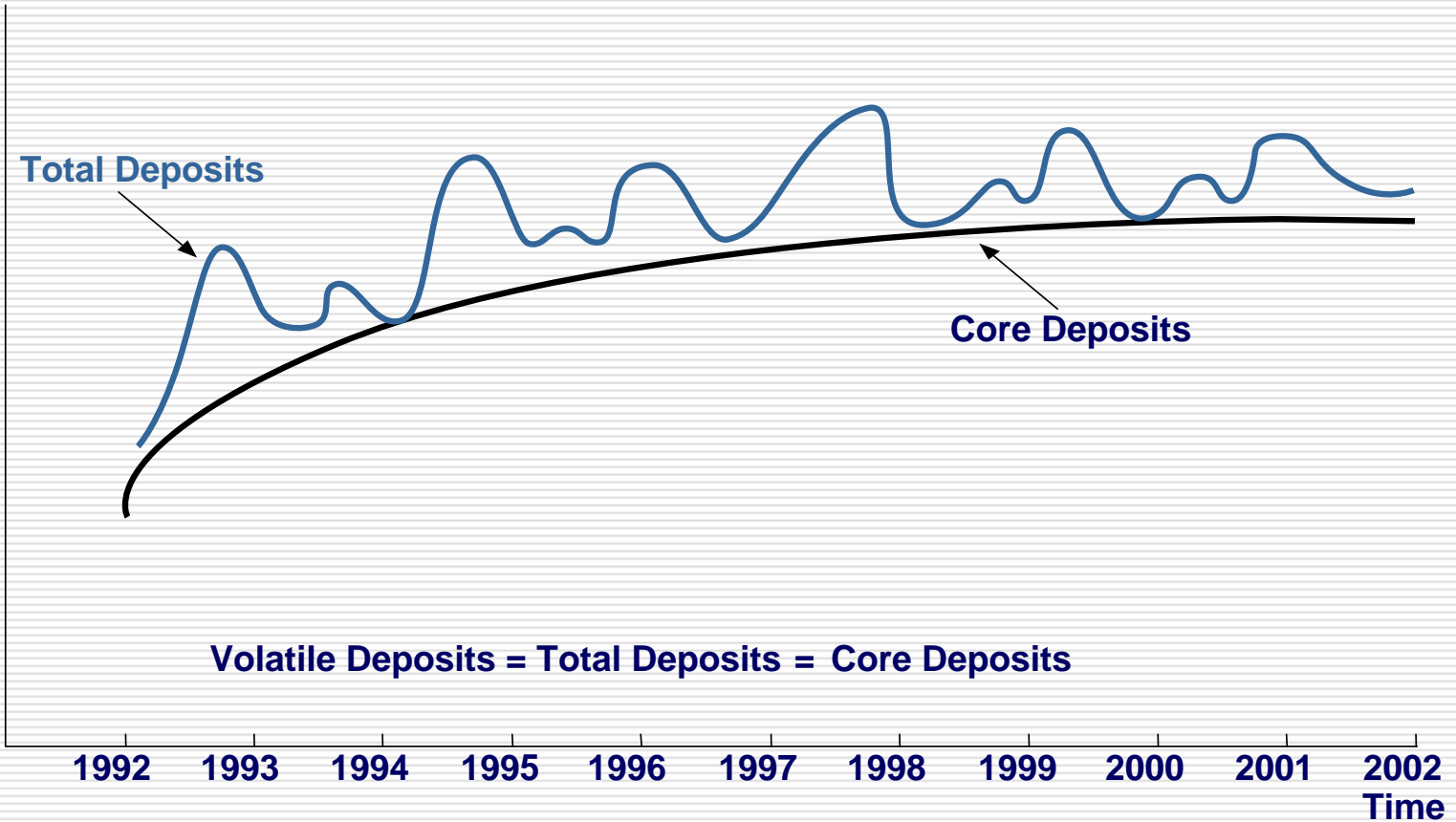
# Liability liquidity measures

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- ❑ Total equity to total assets
- ❑ Risk assets to total assets
- ❑ Loan losses to net loans
- ❑ Reserve for loan losses to net loans
- ❑ The percentage composition of deposits
- ❑ Total deposits to total liabilities
- ❑ Core deposits to total assets
- ❑ Federal funds purchased and RPs to total liabilities
- ❑ Commercial paper and other short-term borrowings to total liabilities.

# Measuring core deposits

Deposit Amount  
(Millions of Dollars)



# A bank's ability to borrow

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- ❑ Banks with high quality assets and a large capital base can issue more debt at relatively low rates.
  - ❑ Banks with stable deposits generally have the same widespread access to borrowed funds at relatively low rates.
  - ❑ Those that rely heavily on purchased funds, in contrast, must pay higher rates and experience greater volatility in the composition and average cost of liabilities.
  - ❑ For this reason, most banks today compete aggressively for retail core deposits.
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# Liquidity analysis of PNC Bank and Community National

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- Compared to larger, money center banks, small banks rely on different sources of liquidity.
- Liquidity measures for PNC Bank with \$63 billion in assets and Community National Bank with \$156 million in assets are calculated using the balance sheet and risk figures from Chapter 3.



# Asset liquidity measure for PNC and First Community

Asset Liquidity Measures	PNC Bank (%)	First Community Bank (%)
<b>1 Percentage of total assets</b>		
a. Cash and due from banks	5.50%	6.14%
b. Due from banks (interest bearing)	0.20%	0.14%
c. Federal funds sold and reverse repurchase agreement	0.58%	7.79%
d. Treasuries and U.S. agencies <sup>b</sup>	0.83%	10.78%
Total gross liquid assets (a + b + c + d)	7.11%	24.85%
e. Unpledged U.S. Treasuries, agencies and municipal securities (maturity < 1 year) <sup>c</sup>	0.74%	8.40%
f. Federal funds sold and reverse RPs minus federal funds purchased and RPs	-1.70%	7.10%
Total (a + b + e + f)	4.74%	21.78%
Total (b + e + f)	-0.76%	15.64%
<b>2 Percentage of total deposits</b>		
a. Net loans	96.81%	70.86%

# Asset liquidity measure for PNC and First Community

	PNC Bank (%)	First Community Bank (%)
<b>Asset Liquidity Measures</b>		
<b>Liability Liquidity Measures</b>		
<b>1 Percentage of total assets</b>		
a. Total deposits	70.93%	91.65%
b. Federal funds purchased and RPs	2.28%	0.69%
c. Other borrowed funds < 1 year	2.79%	0.00%
<b>2 Percentage of total deposits</b>		
a. Demand deposits	10.95%	35.20%
b. All NOW & ATS accounts	1.96%	7.16%
c. Insured money market deposit accounts	33.11%	18.01%
d. Other savings deposits	2.95%	4.21%
e. Time deposits <\$100,000	14.77%	16.27%
f. Time deposits (CDs) > \$100,000	4.37%	10.80%
<b>3 Total equity to total assets</b>	8.25%	7.29%
<b>4 Non Current loans to total loans</b>	1.05%	2.91%
<b>5 Net loan charge-offs to total loans</b>	2.11%	0.24%
<b>6 Reserve for loan losses to total loans</b>	1.49%	0.82%
<b>7 Core deposits to total assets</b>	63.74%	80.85%
<b>8 Volatile liabilities to total assets</b>	11.02%	10.30%

# Liquidity planning

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- Banks actively engage in liquidity planning at two levels.
  - The first relates to managing the required reserve position.
  - The second stage involves forecasting net funds needs derived, seasonal or cyclical phenomena and overall bank growth.

# Liquidity planning: Monthly intervals

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- The second stage of liquidity planning involves projecting funds needs over the coming year and beyond, if necessary.
- Projections are separated into three categories:
  1. base trend,
  2. short-term seasonal, and
  3. cyclical values.

# Forecasts of trend, seasonal, and cyclical components of deposits and loans reference balance sheet.

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## Assets

Cash and due from banks	\$ 160
Loans	1,400
Investment securities	400
Other assets	40
Total	\$2,000

## Liabilities

Transaction accounts and nonnegotiable deposits	\$1,600
Certificates of deposit and other borrowing	280
Stockholders' equity	120
Total	\$2,000

# Forecasts of trend, seasonal, and cyclical components of deposits and loans

## *Deposit forecast*

End of Month	Trend Deposits	(2) Seasonal Deposit Index	(3) Seasonal Deposits - Dec. Deposits	(4) Cyclical Deposits	(5) Total
January	\$1,608	99%	-\$16	-\$3	\$1,589
February	1,616	102	+32	8	1,656
March	1,623	105	+80	7	1,710
April	1,631	107	+112	10	1,753
May	1,639	101	16	1	1,656
June	1,647	96	-64	-8	1,575
July	1,655	93	-112	-15	1,528
August	1,663	95	-80	-9	1,574
September	1,671	97	-48	-4	1,619
October	1,680	101	+16	0	1,696
November	1,688	104	+64	+3	1,755
December	1,696	100	0	0	1,696

# Forecasts of trend, seasonal, and cyclical components of deposits and loans

## *Loan forecast*

End of Month	Trend Loans*	Seasonal Loan Index	Seasonal Loan- Dec. Loans	Cyclical Loans	Total
January	\$1,413	101%	\$14	\$6	\$1,433
February	1,427	97	-42	-9	1,376
March	1,440	95	-70	-18	1,352
April	1,454	94	-84	-21	1,349
May	1,467	97	-42	-15	1,410
June	1,481	102	28	-3	1,506
July	1,495	108	112	9	1,616
August	1,510	106	84	17	1,611
September	1,524	103	42	11	1,577
October	1,538	99	-14	5	1,529
November	1,553	98	-28	0	1,525
December	1,568	100	0	0	1,568

# Monthly liquidity needs

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- The bank's monthly liquidity needs are estimated as the forecasted change in loans plus required reserves minus the forecast change in deposits:
    - Liquidity needs =  
Forecasted  $\Delta$ loans +  $\Delta$ required reserves  
- forecasted  $\Delta$ deposits
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# Estimates of liquidity needs

<b>End of Month</b>	<b>ΔDeposits</b>	<b>ΔRequired Reserves</b>	<b>ΔLoans</b>	<b>Liquidity Needs*</b>
<b>January</b>	<b>11.0</b>	<b>1.1</b>	<b>\$ 33.0</b>	<b>\$42.9</b>
<b>February</b>	<b>56.0</b>	<b>5.6</b>	<b>-24.0</b>	<b>-74.4</b>
<b>March</b>	<b>110.0</b>	<b>11.0</b>	<b>-48.0</b>	<b>-147.0</b>
<b>April</b>	<b>153.0</b>	<b>15.3</b>	<b>-51.0</b>	<b>-188.7</b>
<b>May</b>	<b>56.0</b>	<b>5.6</b>	<b>10.0</b>	<b>-40.4</b>
<b>June</b>	<b>-25.0</b>	<b>-2.5</b>	<b>106.0</b>	<b>128.5</b>
<b>July</b>	<b>-72.0</b>	<b>-7.2</b>	<b>216.0</b>	<b>280.8</b>
<b>August</b>	<b>-26.0</b>	<b>-2.6</b>	<b>211.0</b>	<b>234.4</b>
<b>September</b>	<b>19.0</b>	<b>1.9</b>	<b>177.0</b>	<b>159.9</b>
<b>October</b>	<b>96.0</b>	<b>9.6</b>	<b>129.0</b>	<b>42.6</b>
<b>November</b>	<b>155.0</b>	<b>15.5</b>	<b>125.0</b>	<b>-14.5</b>
<b>December</b>	<b>96.0</b>	<b>9.6</b>	<b>168.0</b>	<b>81.6</b>

# Liquidity GAP measures

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- Management can supplement this information with projected changes in purchased funds and investments with specific loan and deposit flows.
- The bank can calculate a liquidity GAP by classifying potential uses and sources of funds into separate time frames according to their cash flow characteristics.

# Liquidity gap estimates

	0-30 Days	31-90 Days	91-365 Days
<b>Potential Uses of Funds</b>			
<b>Add: Maturing time deposits</b>			
Small time deposits	5.5	8.0	34.0
Certificates of deposit over \$100,000	40.0	70.0	100.0
Eurodollar deposits	10.0	10.0	30.0
<b>Plus: Forecast new loans</b>			
Commercial loans	60.0	112.0	686.0
Consumer loans	22.0	46.0	210.0
Real estate and other loans	31.0	23.0	223.0
<b>Minus: Forecast net change in transactional accounts</b>			
Demand deposits	- 6.5	105.5	10.0
NOW accounts	0.4	5.5	7.0
Money market deposit accounts	1.6	3.0	6.0
Total uses	\$173.0	155.0	1,260.0
<b>Potential Sources of Funds</b>			
<b>Add: Maturing investments</b>			
Money market instruments	8.0	16.5	36.5
U.S. Treasury and agency securities	7.5	10.5	40.0
Municipal securities	2.5	1.0	12.5
<b>Plus: Principal payments on loans</b>			
Total sources	98.0	290.0	992.0
<b>Periodic Liquidity GAP</b>	75.0	-135.0	268.0
<b>Cumulative Liquidity GAP</b>	75.0	- 60.0	208.0

# Potential funding sources

	Time Frame		
	0-30 Days	31-90 Days	91-365 Days
<b>Purchased Funds Capacity</b>			
Federal funds purchased (overnight and term)	\$20	\$20	\$30
Repurchase agreements	10	10	10
Negotiable certificates of deposit			
Local	50	50	60
National	20	20	25
Eurodollar certificates of deposit	20	20	20
Total	\$120	\$120	\$145
<b>Additional Funding Sources</b>			
Reductions in federal funds sold	\$5	\$5	\$5
Loan participations	20	20	20
Sale of money market securities	5	5	5
Sale of unpledged securities	10	10	10
Total	\$40	\$40	\$40
<b>Potential Funding Sources<sup>a</sup></b>	<b>\$160</b>	<b>\$160</b>	<b>\$185</b>
<b>Potential Extraordinary Funding Needs</b>			
50% of outstanding letters of credit	5	10	15
20% of unfunded loan commitments	25	30	35
Total	\$30	\$40	\$50
<b>Excess Potential Funding Sources</b>	<b>\$130</b>	<b>\$120</b>	<b>\$135</b>

# Considerations in selecting liquidity sources

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- The previous analysis focuses on estimating the dollar magnitude of liquidity needs.
- Implicit in the discussion is the assumption that the bank has adequate liquidity sources.
- Banks with options in meeting liquidity needs evaluate the characteristics of various sources to minimize costs.

# Evaluating *Asset sales*

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- ❑ Brokerage fees
- ❑ Securities gains or losses
- ❑ Foregone interest income
- ❑ Any increase or decrease in taxes
- ❑ Any increase or decrease in interest receipts

# Evaluating *New borrowings*

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- Brokerage fees
- Required reserves
- FDIC insurance premiums
- Servicing or promotion costs
- Interest expense.
- The costs
- Implicit interest rate forecast





**Thank You Very Much for  
Your Kind Attention!**



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